

REMARKS

This is a full and timely response to the Office Action mailed October 03, 2007.

By this Amendment, claim 1 has been amended to incorporate the subject matter of claim 2 and to more particularly define the present invention. Thus, in view of the amendments to claim 1, claim 2 has been canceled without prejudice or disclaimer to its underlying subject matter. Thus, claims 1 and 3-8 are currently pending in this application. Support for the claim amendments can be readily found variously throughout the specification and the original claims (see, for example, page 7, lines 10-17, and the page 9, lines 5-15 of the original specification).

In view of these amendments, Applicant believes that all pending claims are in condition for allowance. Reexamination and reconsideration in light of the above amendments and the following remarks is respectfully requested.

Rejection under 35 U.S.C. §103

Claims 1-8 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Ito et al., (U.S. Patent No. 6,296,940) in view of Oda et al. (JP 2002-069750). Applicant respectfully traversed this rejection.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Here, in this case, Ito et al. in combination with Oda et al. fail to teach or suggest all of the claim limitations with particular emphasis on the limitations "*wherein an amount of said phosphorus atom-containing flame retardant polyester resin (C) is determined such that a phosphorus content in the flame retardant epoxy resin composition is in a range of 0.02 % to 9 % by weight ratio, and a hydroxyl equivalent of said novolac resin is in a range of 0.8 to 1.2 with respect to said epoxy resin (A)*".

Applicants believe that the present invention (as recited in amended claim 1) are patentable over Ito et al. and Oda et al. since the cited references fail to teach or suggest the superior

effects of the present invention. As described in the specification and shown in the Examples, a cured product of the claimed epoxy resin composition is excellent in heat resistance, water resistance, chemical resistance as well as flame retardancy, solder resistance, moisture resistance and tracking resistance (see Table 1 on page 18 of the specification). In addition, since the claimed epoxy resin composition contains a novolac resin as the curing agent (B) such that the hydroxyl equivalent of the novolac resin is within the claimed range of 0.8 to 1.2 with respect to said epoxy resin (A), there is the additional superior effect of preventing the occurrence of insufficient curing. The cited references fail to teach or suggest such features of amended claim 1 of the present invention, and the superior results obtained therefrom.

For the Examiner's reference, with respect to Examples 1-6 of the present specification, the hydroxyl equivalent of the novolac resin in the present invention can be calculated, as follows.

Examples 1-3

As described on page 14, lines 21-29, of the present specification, 100 parts of a phenol novolac type epoxy resin "EPICLON N-770" (manufactured by DAINIPPON INK AND CHEMICALS, INCORPORATED, epoxy equivalent 189g/eq), and 70 parts of a bisphenol A-type epoxy resin "EPICLON 1051" (manufactured by DAINIPPON INK AND CHEMICALS, INCORPORATED, epoxy equivalent 470g/eq) were used as the epoxy resin (A). In addition, 72 parts of a novolac type phenol resin "PSM-4261" (manufactured by Gunei Chemical Industry Co., Ltd., hydroxyl equivalent 106 g/eq, softening point 80°C) was used as the curing agent (B).

$$\text{Epoxy equivalent: } 100/189 + 70/470 = 0.529 + 0.149 = 0.678$$

$$\text{Hydroxyl equivalent: } 72/106 = 0.679$$

Therefore, the hydroxyl equivalent of the novolac resin relative to the epoxy equivalent of the epoxy resin (A) is approximately 1 ($= 0.679/0.678$).

Examples 4-6

As described on page 16, lines 6-14 of the present specification, 110 parts of a cresol novolac type epoxy resin "EPICLON N-665" (manufactured by DAINIPPON INK AND CHEMICALS, INCORPORATED, epoxy equivalent 206g/eq), and 70 parts of a bisphenol A-type epoxy resin "EPICLON 1051" (manufactured by DAINIPPON INK AND CHEMICALS, INCORPORATED, epoxy equivalent 470g/eq) were used as the epoxy resin (A). 72 parts of a

novolac type phenol resin "PSM-4261" (manufactured by Gunei Chemical Industry Co., Ltd., hydroxyl equivalent 106 g/eq, softening point 80°C) was used as the curing agent (B).

Epoxy equivalent: $110/206 + 70/470 = 0.534 + 0.149 = 0.683$

Hydroxyl equivalent: $72/106 = 0.679$

Therefore, the hydroxyl equivalent of the novolac resin relative to the epoxy equivalent of the epoxy resin (A) is approximately 0.99 ($= 0.679/0.683$).

Hence, as shown by these calculations, Examples 1-6 meet the defined range of amended claim 1. Further, the experimental results of Examples 1-6 and Comparative Examples 1-3 (see Table 1 on page 18 of the specification) clearly show the importance of the novolac resin in obtaining a cured product excellent in heat resistance, water resistance, chemical resistance as well as flame retardancy, solder resistance, moisture resistance and tracking resistance.

Thus, as established by the Examples of the specification, the claimed epoxy resin composition clearly possess unexpected and superior properties not disclosed or suggested in Ito et al. and Oda et al.. As the Examiner already knows, a showing of superior and unexpected properties can rebut a *prima facie* case of obviousness. *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963).

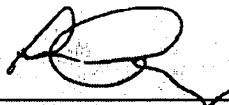
Thus, for these reasons, withdrawal of this rejection is respectfully requested.

CONCLUSION

For the foregoing reasons, all the claims now pending in the present application are believed to be clearly patentable over the outstanding rejections. Accordingly, favorable reconsideration of the claims in light of the above remarks is courteously solicited. If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the below-listed number.

Dated: January 2, 2008

Respectfully submitted,

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